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ART UNIT	PAPER NUMBER
2143	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
	09/473,571	WOLRICH ET AL.
Office Action Summary	**Examiner**	**Art Unit**	
	David E. England	2143	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 December 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date *5/13/2005*.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 40 are presented for examination.

Drawings

2.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "status data of multiple media access devices is stored in a single one of the at least one register of the interface" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.   Claims 3, 6 – 8, 10, 14, 21 – 23, 31, 39 and 40 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention.

5.   Claims 3, 6 – 8, 10, 14, 21 – 23 and 31 recites the limitation "the device". There is

insufficient antecedent basis for this limitation in the claim.

6.   Claim 39 recites the limitation of, "the at least one media access device comprises

multiple media access devices". One interpretation of this limitation is "one media access device

comprises multiple media access devices". Examiner requests the Applicant to explain how one

device can turn into multiple devices or "duplicate" itself into multiple devices. Applicant is also

asked to point to sections of the specification to support their explanation.

7.   Claim 40 recites the limitation of, "the status data of multiple media access devices is

stored in a single one of the at least one register of the interface". It is unclear as to how the

Applicant wants the status data stored in the register, (i.e., one copy in one register, multiple

copies in one register, one copy in multiple registers, etc.). Applicant is asked to explain this

limitation while pointing to sections of the specification to support their limitation and

explanation.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   Claims 1 – 5, 7 – 11, 13, 14, 16, 17 and 33 – 40 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Isfeld et al. U.S. Patent No. 5592622 (hereinafter Isfeld) in view of

Chilton et al. U.S. Patent No. 6418488 (hereinafter Chilton) in further view of Witkowski et al.

(6430626) (hereinafter Witkowski).

10.   Referencing claim 1, as closely interpreted by the Examiner, Isfeld teaches a processor,

comprising:

11.   media access device, (e.g. col. 7, lines 10 – 48, *"MAC device"*);

12.   one or more processing engines to schedule transfers of packets data between the

processor and the devices, (e.g. col. 8, line 50 – col. 9, line 15);

13.   a push engine to perform unsolicited transfers of the status data to the processing engines

in response to the module collecting new status data, (e.g. col. 8, lines 11 – 34 & col. 10, line 12

– col. 11, line 67 & col. 23, line 45 – col. 24, line 15). Isfeld does not specifically teach a module

configured to collect status data from devices connected to a bus, the status data indicating

readiness of the devices to participate in data transfers,

14.   the status data comprising data indicating whether one of the media access devices has

received packet data. Chilton teaches a module configured to collect status data from devices

connected to a bus, the status data indicating readiness of the devices to participate in data

transfers, (e.g. col. 25, lines 18 – 59). It would have been obvious to one skilled in the art at the

time the invention was made to combine Chilton with Isfeld because if one device does not

receive a type of status data (i.e. acknowledgement signal), transfer errors could accumulate in

the system. Witkowski teaches the status data comprising data indicating whether one of the

media access devices has received packet data, (e.g. col. 20, line 45 – col. 21, line 28, *"The RX*

MCB interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in

one of the RX BUFs 520, 522 ... "). It would have been obvious to of ordinary skill in the art at

the time the invention was made to combine Witkowski with Isfeld and Chilton because by

sending a status data indicating that a media access control device has received a packet allows

the system to ready the packet for processing and/or transmission to other devices in the system.

15.   As per claim 2, Isfeld teaches wherein the processing engine comprises:

16.   one or more input transfer registers to receive the unsolicited transfers of status data for

use to schedule the transfers of packets data, (e.g. col. 23, line 45 – col. 24, line 15).

17.   As per claim 3, Isfeld teaches wherein the processing engine uses a portion of received

new status data to schedule retrievals of packets data from the devices, (e.g. col. 10, line 46 – col.

11, line 46).

18.   As per claim 4, Isfeld teaches wherein the processing engine uses a portion of the

received status data to schedule transmissions of packets data, (e.g. col. 10, line 46 – col. 11, line

46).

19.   As per claim 5, Isfeld teaches wherein the processing engine uses a portion of the

received status data to determine whether schedule transmissions of packets data have been

completed, (e.g. col. 18, lines 23 – 61).

20.   As per claim 7, Isfeld teaches wherein a portion of the status data are flags indicative of

whether associated devices have packets data to transmit, (e.g. col. 36, line 50 – col. 37, line 25).

21.   As per claim 8, Isfeld and Chilton do not specifically teach wherein a portion of the status

data includes flags indicative of whether associated devices have space to receive packets data.

Witkowski teaches wherein a portion of the status data includes flags indicative of whether

associated devices have space to receive data packets, (e.g. col. 11, line 52 – col. 12, line 23,

"...*status bits on a respective one of the BUF_AVAIL[5:0]* signals to indicate whether each of*

its corresponding transmit FIFOs 304 for the respective port has enough empty space available

to store data."). It would have been obvious to one skilled in the art at the time the invention was

made to combine Witkowski with the combine system of Isfeld and Chilton because this could

prevent incoming status data to be written over the status data that already exists in the space

provided.

22.   As per claim 14, Isfeld and Chilton do not specifically teach wherein collecting further

comprises:

23.   polling the devices for ready status data on the availability of ports thereon; and

24.   receiving ready status data associated with individual ones of the devices in response to

the polling. Witkowski teaches wherein collecting further comprises:

25.   polling the devices for ready status data on the availability of ports thereon, (e.g. col. 17,

lines 33 – 58); and

26.   receiving ready status data associated with individual ones of the devices in response to

the polling, (e.g. col. 17, lines 33 – 58). It would have been obvious to one skilled in the art at the

time the invention was made to combine Witkowski with the combine system of Isfeld and

Chilton because if there are all ports are in use at the time the system cannot receive any data.

Therefore, this would prevent bottlenecking.

27.   As per claim 16, Isfeld and Chilton do not specifically teach wherein the transferred

portion of the information includes flags that indicate whether associated ports of the devices

have one of space to receive data packets and data packets ready to transmit over the bus.

Witkowski teaches wherein the transferred portion of the information includes flags that indicate

whether associated ports of the devices have one of space to receive data packets and data

packets ready to transmit over the bus, (e.g. col. 22, line 36 – col. 23, line 14 & col. 23, line 48 – col. 24, line 23). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of Isfeld and Chilton because if there are all ports are in use at the time the system cannot receive any data. Therefore, this would prevent bottlenecking and packet collision.

28.   As per claim 34, as closely interpreted by the Examiner, Isfeld teaches the at least one media access control device comprises an Ethernet media access control device, (e.g. col. 7, lines 29 – 60).

29.   As per claim 37, Isfeld teaches at least one memory controller to a Synchronous Dynamic Random Access Memory (SDRAM), (e.g. col. 11, line 57 – col. 12, line 20).

30.   As per claim 38, Isfeld teaches a buffer to store packet data received by the at least one media access device, (e.g., col. 8, line 50 – col. 9, line 15).

31.   As per claim 39, as closely interpreted by the Examiner, Isfeld teaches the at least one media access device comprises multiple media access devices, (e.g., col. 7, lines 28 – 60).

32.   As per claim 40, as closely interpreted by the Examiner, Isfeld teaches the status data of multiple media access devices is stored in a single one of the at least one register of the interface, (e.g., col. 27, lines 6 – 12).

33.   Claims 9, 10, 11, 13, 17, 33, 35, and 36 are rejected for similar reasons as stated above.

34.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488) in further view of Witkowski (6430626) in further view of Williams et al. (6144669) (hereinafter Williams).

35.   As per claim 6, Isfeld, Chilton and Witkowski do not specifically teach wherein the module is configured to poll the devices for the status data over a second bus. Williams teaches wherein the module is configured to poll the devices for the status data over a second bus, (e.g. col. 5, lines 29 – 59 & col. 11, lines 4 – 38). It would have been obvious to one skilled in the art at the time the invention was made to combine Williams with the combine system of Isfeld, Chilton and Witkowski because having the status data over a second bus could speed up a process and prevent latency and packet collision.

36.   Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488) in further view of Witkowski (6430626) in further view of Vaidya (6279113).

37.   As per claim 12, Isfeld, Chilton and Witkowski do not specifically teach wherein determining includes comparing a value of a time stamp transferred with the information to a previous value of the time stamp. Vaidya teaches wherein determining includes comparing a

value of a time stamp transferred with the information to a previous value of the time stamp, (e.g.
col. 12, lines 11 – 22). It would have been obvious to one skilled in the art at the time the
invention was made to combine Vaidya with the combine system of Isfeld, Chilton and
Witkowski because if one desired to save an updated status data the comparisons of the time
stamp would allow for this function to take place. Therefore, leading to possible error prevention
from the system accessing obsolete information.

38.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld (5592622)
in view of Chilton (6418488) in further view of Vaidya (6279113) in further view of Witkowski
(6430626).

39.   As per claim 15, Isfeld, Chilton and Vaidya do not specifically teach wherein collecting
further comprises:

40.   writing the received ready status data to a status register;

41.   scheduling transfers of data packets over the bus in response to the transferred portion of
the ready status data. Witkowski teaches wherein collecting further comprises:

42.   writing the received ready status data to a status register, (e.g. col. 34, line 45 – col. 35,
line 25);

43.   scheduling transfers of data packets over the bus in response to the transferred portion of
the ready status data, (e.g. col. 17, lines 33 – 58). It would have been obvious to one skilled in
the art at the time the invention was made to combine Witkowski with the combine system of
Isfeld, Chilton and Vaidya because it would be more efficient to write received ready status data

to a status register and if one wanted to transfer a type of response to the status data (i.e.

acknowledgement) it would be more efficient for to transfer a portion of the status data for error

checking.

44.   Claims 18, 19, 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ebrahim (5887134) in view of Gulledge (5644623) in further view of Witkowski (6430626).

45.   Referencing claim 18, as closely interpreted by the Examiner, Ebrahim teaches a router,

comprising:

46.   a bus, (e.g. col. 1, lines 36 – 48); and

47.   a parallel processor coupled to the bus and comprising, (e.g. col. 1, lines 36 – 48):

48.   a plurality of processing engines to process data transfers with a plurality of devices

connected to the bus, (e.g. col. 15, lines 19 – 37);

49.   the status data indicating readiness of the devices to participate in data transfers, (e.g. col.

5, line 65 – col. 6, line 14 & col. 11, line 36 – col. 12, line 17). Ebrahim does not specifically

teach an interface connected to collect ready status data from the media access devices and to

automatically transfer ready status data the processing engines in response to the ready status

data being collected, the ready status data comprising data indicating whether a one of the media

access control devices has received packet data, and media access device.

50.   Gulledge teaches an interface connected to collect status data from the devices and to

automatically transfer status data the processing engines in response to the status data being

collected, (e.g. col. 14, lines 44 – 63). It would have been obvious to one skilled in the art at the

time the invention was made to combine Gulledge with Ebrahim because it would be faster if the

status was automatically transfer once the status data was collected. This could aid in the

shortening of latency. Gulledge does not specifically teach the ready status data comprising data

indicating whether a one of the media access control devices has received packet data.

51.   Witkowski teaches media access device, (e.g. col. 50, lines 1 – 23), and

52.   the ready status data comprising data indicating whether a one of the media access

control devices has received packet data, (e.g. col. 20, line 45 – col. 21, line 28, *"The RX MCB*

interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in one of

the RX BUFs 520, 522... "). It would have been obvious to one skilled in the art at the time the

invention was made to combine Witkowski with the combine system of Ebrahim and Gulledge

because of similar reasons as stated above in claim 1.

53.   As per claim 19, Ebrahim and Gulledge do not specifically teach wherein the ready status

data indicates the readiness of individual ones of the devices to one of receive a data packet from

and transmit a data packet to the parallel processor. Witkowski teaches wherein the ready status

data indicates the readiness of individual ones of the devices to one of receive a data packet from

and transmit a data packet to the parallel processor, (e.g. col. 20, line 45 – col. 21, line 28, *"The*

RX MCB interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in

one of the RX BUFs 520, 522... "). It would have been obvious to one skilled in the art at the time

the invention was made to combine Ebrahim and Gulledge with Witkowski because of similar

reasons stated above and furthermore, it could lead to errors if the devices are not ready to

transmit or receive data. This could prevent bottlenecking and packet collision.

54.   As per claim 22, Ebrahim and Gulledge disclose all that is described above but do not

specifically teach a ready bus capable of transferring ready status data from the devices to the

interface. Witkowski teaches a ready bus capable of transferring ready status data from the

devices to the interface, (e.g. col. 20, line 45 – col. 21, line 28, *"The RX MCB interface 530*

asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in one of the RX BUFs

520, 522... "). It would have been obvious to one skilled in the art at the time the invention was

made to combine Witkowski with the combine system of Ebrahim and Gulledge because an error

could occur if the data on the bus is not ready to transfer from the device to the interface.

55.   As per claim 26, Ebrahim teaches wherein the devices are capable of transmitting data

packets between the bus and external networks, (e.g. col. 3, lines 7 – 28).

56.   Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim

(5887134) in view of Gulledge (5644623) in further view of Witkowski (6430626) in further

view of Vaidya (6279113).

57.   As per claim 20, Ebrahim, Gulledge and Witkowski disclose all that is described above

but do not specifically teach wherein the ready status data includes a time stamp indicative of a

staleness of the ready status data. Vaidya teaches wherein the ready status data includes a time

stamp indicative of a staleness of the ready status data, (e.g. col. 12, lines 11 – 22). It would have

been obvious to one skilled in the art at the time the invention was made to combine Vaidya with

the combine system of Ebrahim, Gulledge and Witkowski because if one desired to save an

updated status data the comparisons of the time stamp would allow for this function to take

place. Therefore, leading to possible error prevention from the system accessing obsolete

information.

58.   Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ebrahim (5887134) in view of Gulledge (5644623) in further view of Witkowski (6430626) in

further view of Isfeld (5592622).

59.   As per claim 21, Ebrahim, Gulledge and Witkowski disclose all that is described above

but do not specifically teach wherein a portion of the ready status data includes information to

enable the processing engines to identify which scheduled data transfers to the devices have been

completed. Isfeld teaches wherein a portion of the ready status data includes information to

enable the processing engines to identify which scheduled data transfers to the devices have been

completed, (e.g. col. 2, line 65 – col. 3, line 23). It would have been obvious to one skilled in the

art at the time the invention was made to combine Isfeld with the combine system of Ebrahim,

Gulledge and Witkowski because if the device does not know that the data transfer has been

completed it could continually send the same data not knowing the status of the completely sent

data, (i.e. acknowledgement signal). This would be used for error prevention.

60.   As per claim 27, Ebrahim, Gulledge and Witkowski disclose all that is described above

but do not specifically teach wherein the interface transfers the collected status data without

being solicited to transfer the data by the processing engines. Isfeld teaches wherein the interface

transfers the collected status data without being solicited to transfer the data by the processing

engines, (e.g. col. 23, line 45 – col. 24, line 15). It would have been obvious to one skilled in the

art at the time the invention was made to combine Isfeld with the combine system of Ebrahim,

Gulledge and Witkowski because it would be more efficient if data that was more important was

to be transferred first. Furthermore, it would be faster if the data that was transmitted were

unsolicited because the data would not use up time in unnecessary processing.

61.   Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim

(5887134) in view of Gulledge (5644623) in further view of Witkowski (6430626) in further

view of Cotton et al. (5623489) (hereinafter Cotton).

62.   As per claim 23, Ebrahim, Gulledge and Witkowski discloses all that is described above

but do not specifically teach wherein the ready status data indicates whether associated ports of

the devices are ready to perform one of a transmission of a data packet to the bus and a receive of

a data packet from the bus. Cotton teaches wherein the ready status data indicates whether

associated ports of the devices are ready to perform one of a transmission of a data packet to the

bus and a receive of a data packet from the bus, (e.g. col. 9, lines 8 – 35). It would have been

obvious to one skilled in the art at the time the invention was made to combine Cotton with the

combine system of Ebrahim, Gulledge and Witkowski because if there are all ports are in use at

the time the system cannot receive any data. Therefore, this would prevent bottlenecking and

packet collision.

63.   Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ebrahim (5887134) in view of Gulledge (5644623) in further view of in further view of

Witkowski (6430626) in further view of Vaidya (6279113) in further view of Cotton (6430626).

64.   As per claim 24, Ebrahim, Gulledge, Witkowski and Vaidya discloses all that is

described above but do not specifically teach wherein each processing engine comprises at least

one input transfer register; and

65.   the interface is configured to write ready status data to one of the input transfer registers

assigned to a to scheduler thread. Cotton teaches wherein each processing engine comprises at

least one input transfer register, (e.g. col. 10, lines 15 – 44); and

66.   the interface is configured to write ready status data to one of the input transfer registers

assigned to a to scheduler thread, (e.g. col. 10, lines 15 – 44). It would have been obvious to one

skilled in the art at the time the invention was made to combine Cotton with the combine system

of Ebrahim, Gulledge, Witkowski and Vaidya because it would be more efficient to write

received ready status data to a status register and if one wanted to transfer a type of response to

the status data (i.e. acknowledgement) it would be more efficient for to transfer a portion of the

status data for error checking.

67.   As per claim 25, Ebrahim, Gulledge, Witkowski and Vaidya discloses all that is

described above but do not specifically teach wherein the interface is configured to protect one

of the input transfer registers from being read by the processing engines during the transferring

of ready status data thereto. Cotton teaches wherein the interface is configured to protect one of

the input transfer registers from being read by the processing engines during the transferring of

ready status data thereto, (e.g. col. 16, lines 30 – 59). It would have been obvious to one skilled

in the art at the time the invention was made to combine Cotton with the combine system of

Ebrahim, Gulledge, Witkowski and Vaidya because this would be a more efficient way to protect

status data that does not need to be processed by the processing engines. Therefore, this could

help prevent errors from occurring in the system.

68.   Claims 28 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over

O'Loughlin et al. (6275505) (hereinafter O'Loughlin) in view of Witkowski (6430626) in further

view of Isfeld (5592622).

69.   As per claim 28, O'Loughlin teaches an article comprising a computer-readable medium

which stores executable instructions for transferring data packets over a bus, the instructions

causing a processor to, (e.g. col. 10, lines 20 – 33):

70.   But, O'Loughlin does not specifically teach collect information on readiness of devices

connected to the bus to one of transmit and receive data packets; and

71.   transfer a portion of the collected information to a processing engine configured to

schedule data transfers, the transferring being unsolicited by the processing engine. Witkowski

teaches information on readiness of devices, (e.g. col. 20, line 45 – col. 21, line 28, *"The RX*

MCB interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in

one of the RX BUFs 520, 522 ..."), and the devices connected to the bus to one of transmit and

receive data packets, (e.g. col. 23, lines 14 – 47 & col. 24, lines 13 – 43). It would have been

obvious to one skilled in the art at the time the invention was made to combine Witkowski with

O'Loughlin because it would be more efficient to transmit and receive data when the devices is

ready. If the device is not ready it could receive or transmit incorrect data leading to errors. Isfeld

teaches transfer a portion of the collected information to a processing engine configured to

schedule data transfers, the transferring being unsolicited by the processing engine, (e.g. col. 23,

line 45 – col. 24, line 15). It would have been obvious to one skilled in the art at the time the

invention was made to combine Isfeld with the combine system of O'Loughlin and Witkowski

because it would be more efficient if data that was more important was to be transferred first.

Furthermore, it would be faster if the data that was transmitted were unsolicited because the data

would not use up time in unnecessary processing.

72.   As per claim 29, O'Loughlin and Isfeld discloses all that is described above but do not

specifically teach the instructions further causing the processor to:

73.   schedule data transfers with a portion of the devices based on the transferred portion of

the collected information. Witkowski teaches the instructions further causing the processor to:

74.   schedule data transfers with a portion of the devices based on the transferred portion of

the collected information, (e.g. col. 17, lines 33 – 58 & col. 34, line 45 – col. 35, line 25). It

would have been obvious to one skilled in the art at the time the invention was made to combine

Witkowski with the combine system of O'Loughlin and Isfeld because of similar reasons stated

above.

75.   As per claim 30, O'Loughlin and Isfeld discloses all that is described above but do not

specifically teach the instructions further causing the processor to:

76.   determine whether the transferred information is at least partly new; and

77.   wherein instructions causing the processor to schedule are performed in response to

determining that the transferred information being at least partly new. Witkowski teaches the

instructions further causing the processor to:

78.   determine whether the transferred information is at least partly new, (e.g. col. 17, line 33

– col. 18, line 36); and

79.   wherein instructions causing the processor to schedule are performed in response to

determining that the transferred information being at least partly new, (e.g. col. 17, line 33 – col.

18, line 36).). It would have been obvious to one skilled in the art at the time the invention was

made to combine Witkowski with the combine system of O'Loughlin and Isfeld because it would

be more efficient for the user to determine the difference between partly new information and old

information. This could lead to knowing when to update information in the system.

80.   Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld

(5592622) in view of Chilton (6418488) in further view of Witkowski (6430626) in further view

of Adler et al. (6552826) (hereinafter Adler).

81.   As per claim 31, Isfeld and Witkowski teaches all that is discussed above but does not

specifically teach the processing engines schedule the transfer of data packets independently of

the module collecting status data from the devices. Adler teaches the processing engines

schedule the transfer of data packets independently of the module collecting status data from the

devices; (e.g. col. 18, line 18 – col. 20, line 42). It would have been obvious to one of ordinary

skill in the art at the time the invention was made to combine Adler with the combines system of

Isfeld and Witkowski for it is more efficient in terms of faster transmission with low latency

from a small overhead that is utilized in a connectionless network system. This function is utilize

in User Datagram Protocol, (UDP), having small overhead and does not use system

acknowledgements in a network as opposed to a network protocol that has more overhead in the

header that would slow down the transmission of packets.

82.   As per claim 32, Isfeld and Witkowski teaches all that is discussed above but does not

specifically teach the processing engines schedule the transfer of data packets from a device to

the bus independently of the readiness of other devices to receive the data, and schedule the

transfer of data from the bus to a device independently of the readiness other devices to send the

data. Adler teaches the processing engines schedule the transfer of data packets from a device to

the bus independently of the readiness of other devices to receive the data, and schedule the

transfer of data from the bus to a device independently of the readiness other devices to send the

data, (e.g. col. 18, line 18 – col. 20, line 42). It would have been obvious to one of ordinary skill

in the art at the time the invention was made to combine Adler with the combines system of

Isfeld and Witkowski for it is more efficient in terms of faster transmission with low latency

from a small overhead that is utilized in a connectionless network system. This function is utilize

in User Datagram Protocol, (UDP), having small overhead and does not use system

acknowledgements in a network as opposed to a network protocol that has more overhead in the

header that would slow down the transmission of packets.

Response to Arguments

83.   Applicant's arguments filed 12/02/2004 have been fully considered but they are not

persuasive.

84.   In the Remarks, Applicant argues in substance that "the device" has antecedent basis

provided by the "media access devices" recited in the corresponding independent claims.

85.   As to part 1, Examiner would like to point out that "the device" and "the media access

device" can be interpreted as two separate devices. If it is the Applicant's desire to have "the

device" mean "the media access device" then the Applicant must amend as such. Therefore,

rejection still stands.

86.   In the Remarks, Applicant argues in substance that Isfeld does not describe a "transfer of

status data indicating readiness of the media access devices to participate in data transfers" as

recited by claim 1. Nor does the Examiner provide a suggestion as to why the status data of the

IOP MACs should be transmitted to another IOP, especially in view of Isfeld's stated goal of

minimizing bus traffic.

87.   As to part 2, in response to applicant's arguments against the references individually, one

cannot show nonobviousness by attacking references individually where the rejections are based

on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In

re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, Chilton is

utilized to teach the status data indicating readiness of the devices to participate in data transfers

as disclosed above.

88.   In the Remarks, Applicant's argument towards claim 18 is not clear. Applicant states

numerous cited areas of the prior art, (Ebrahim and Gulledge), but does not state which part of

the claim language they mean to argue. What is stated is even if such a combination was

constructed it would not provide a router that includes an interface to "transfer ready status data

to the processing engines in response to the status data being collected, the ready status data

indicating readiness of the devices to participate in data transfers, the ready status data

comprising data indicating whether a one of the media access devices has received packet data".

89.   As to part 3, since Applicant does not state which part of the claim language is being

argued specifically, the Examiner will attempt to state what is in the prior art as it applies to the

limitation described above. Examiner would like to draw the Applicant's attention to Ebrahim,

which teaches a type of Acknowledgement as cited above in columns 5 – 7 and 11 – 13. It is well

known in the art that an Acknowledgement is utilized to indicate the status if the device and

whether or not it has received a transmission properly and if an Acknowledgement is received

then the device is ready for the next piece of data to be transferred. This is one example of how

the prior art reads on the claim language. Applicant is asked to be more specific as to which

limitations they are addressing in the Remarks to better aid in the explanation of the prior art and

how it applies to the claim language.

Conclusion

90.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to David E. England whose telephone number is 571-272-3912.

The examiner can normally be reached on Mon-Thur, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David E. England
Examiner
Art Unit 2143

De

DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100